WHAT IS CLAIMED IS:

1. A method of processing particles classified into separate size ranges, each size range being in a separate impactor compartment supported in a common compartment manifold, comprising the steps of moving the compartment manifold and supported compartment from the impactor to a service manifold overlying the compartments, adding a solution for dissolving material in the compartments, and simultaneously moving the compartment manifold and service manifold as a unit under power to enhance dissolution of particles.

2. The method of claim 1 including removing a liquid sample from compartments in the compartment manifold after moving the manifold.

3. The method of claim 1 including the step of connecting a valve inlet to the compartment and drawing the sample into a passageway connected to the valve, and discharging the sample in the passageway through a separate port on the valve.

4. The method of claim 1 including moving the compartment manifold to clear the service manifold after the simultaneous moving, and providing a power actuator for moving the compartment manifold onto an impactor for an impaction cycle of particles provided.

5. The method of claim 1 including moving the compartment manifold and service manifold as a unit by

rocking the service manifold about an axis with the compartment manifold secured to the service manifold.

6. The method of claim 2 wherein the compartment manifold and service manifold are secured together for the simultaneous moving, and subsequent to removing a liquid sample, introducing a liquid into the compartments through ports of a service manifold and washing the compartments.

7. The method of claim 6 including rocking the compartment manifold containing liquid for washing about an axis to agitate the liquid, draining the wash liquid, and adding a rinsing liquid to each of the compartments through a service manifold.

8. The method of claim 7 including draining the rinse liquid from the compartments, and introducing a flow of dry gas through a service manifold to dry surfaces of the compartments.

9. The method of claim 8 including removing the compartment manifold from the service manual after providing a flow of dry gas and connecting the compartment manifold to an impactor cover forming passageways for carrying a flow of a gas carrying particles to be analyzed for impacting particles into each of the compartments.

10. The method of claim 9 including providing an inlet dose of a gas carrying particles to be analyzed to an inlet of the impactor cover.

11. In an impactor and analyzer, comprising an impactor housing forming a plurality of passageways for a flow of a gas containing particles for impaction, an impactor cup manifold supported on the impactor housing and having a plurality of impactor cups each positioned to receive flow from selected passageways in the housing with particles to be classified by the impactor, a sample recovery device comprising a service manifold of size to receive and overlie an impactor cup manifold when the cup manifold is removed from the impactor housing, a support for the service manifold mounting the service manifold about an axis which permits rocking the service manifold, and a plurality of connections to the service manifold for providing ports opening from the service manifold to each of the cups in a cup manifold received in the service manifold, the method of recovering samples from the cups in the cup manifold and cleaning the cups in the cup manifold including the steps of:

a) initially passing a gas carrying particles to be impacted and analyzed through the passageways of the impactor housing;

b) removing the cup manifold and particles deposited in the cups when the gas has passed through the impactor housing;

(c) connecting the cup manifold to the service manifold with the service manifold supported in the service manifold support;

(d) introducing through the ports in the service manifold a solvent in each of the cups; and

(e) rocking the service manifold in the service manifold support about the axis to enhance dissolving particles in the cups.

12. The method of claim 11 including the further step subsequent to rocking the service manifold and cup manifold, of holding the service manifold about the axis in a position inclining impaction surfaces in each of the cups to cause liquid in the cups to drain to a side of the respective cups, and removing a liquid sample from each of the cups.

13. The method of claim 12 wherein the step of removing comprises providing an outlet passage from each of the cups, subjecting the outlet passage to a vacuum and trapping a known volume of a liquid removed from each of the cups in a separate passageway external of the cup manifold.

14. The method of claim 13 including the step of moving the trapped liquid in the separate passageway to a discharge location.

15. The method of claim 11 wherein there is an induction port removably connected to an inlet opening in the impactor housing, and including removing the induction port when the cup manifold is removed from the housing, moving the induction port to a processing station, positioning the induction port such that the induction port will retain liquid, introducing liquid solvent into the inlet throat, and rocking the induction port about an axis to cause particles in the induction port to be engaged by the liquid.

16. The method of claim 15 including the step of removing a liquid sample after the induction port has been rocked to cause dissolving of particles.

17. The method of claim 16 including the step of draining the induction port after removing the sample, and washing the induction port by introducing a wash liquid into the induction port and rocking the inlet throat about its axis.

18. The method of claim 17 wherein the impactor housing includes a preseparator housing connected to the impactor housing, the induction port being connected to an inlet of the preseparator, and including the steps of separating the induction port and the preseparator housing from the impactor housing and from each other, transporting the induction port and the impactor housing to separate supports capable

of rocking the induction port and the preseparator housing, respectively, about separate axes, introducing solvents into the induction port and the preseparator housing, and rocking the induction port and preseparator individually and separately to enhance dissolving particles within the induction port and the preseparator housing.

19. The method of claim 18 including recovering liquid samples from each of the induction port and the preseparator housing after the induction port and preseparator have been rocked to enhance dissolving particles.

20. The method of claim 19 including the step of washing the induction port and the preseparator housing with wash liquid while held in their respective supports, and draining wash liquid from the inlet throat and preseparator subsequent to washing.

21. The method of claim 20 including the step of moving the cup manifold toward the impactor housing prior to passing the gas and particles through the impactor housing, moving the cup manifold away from the impactor housing as part of the removing step, shifting the cup manifold laterally of the impactor housing, to a position underlying a service manifold, moving the cup manifold and service manifold into sealing

engagement, prior to introducing solvent liquid into the cups in the cup manifold.

22. The method of claim 21 wherein the service manifold comprises a first service manifold, and including the step of providing a second service manifold, unsecuring the cup manifold from the first service manifold, and moving the cup manifold and the first service manifold apart, shifting the cup manifold laterally to be in registry with the second service manifold, and introducing wash liquid into the cups in the cup manifold.

23. The method of claim 22 wherein the moving of the cup manifold laterally comprises moving the cup manifold with an actuator.

24. The method of claim 23 wherein the step of moving the cup manifold and the respective service manifold together comprises moving the cup onto an elevator platform and actuating an actuator to move the cup manifold selectively toward and away from the respective service manifold.

25. The method of claim 22 wherein the step of moving the cup manifold laterally of the service manifold comprises mounting the cup manifold on an endless belt that is power driven, and driving the belt to move the cup manifold into registry with the

respective service manifold, the service manifolds being mounted for movement toward and away from the cup manifold.

26. The method of claim 11, wherein the step of introducing solvent comprises injecting solvent by operating a fluid metering device containing the solvent through passageways leading through the service manifold.

27. The method of claim 26, wherein the fluid metering device comprises a movable plunger.

28. The method of claim 15, wherein the step of removing the inlet manifold comprises gripping the inlet manifold with a grip on an end of a moveable arm, moving the arm to release the inlet manifold from the impactor housing, and shifting the arm to move the inlet manifold to its support.

29. The method of claim 11, wherein said manifold is mounted onto a rotary turntable, and the step of moving the cup manifold laterally comprises indexing the turntable between first and second positions.

30. In an impactor processing arrangement including an impactor housing, a manifold containing a plurality of impaction cups removably supportable on

the impactor housing for receiving classified particles passed through the impactor housing, the impactor housing including an induction port at an inlet thereof, and a preseparator connected to the induction port and to an inlet of the impactor housing, a plurality of service manifolds having ports therein which are positioned to open to cups in the cup manifold, the service manifolds including devices for supporting the cup manifold on the respective service manifold, a source of a liquid solvent connected through valves to the passageways of one of the service manifolds, sources of wash liquid and gases connected to passageways of another service manifold, the method comprising classifying particles into the cups of the cup manifold, dissolving particles classified into the cup manifold, removing liquid samples subsequent to the dissolving of particles, and washing the cup manifold after the samples have been removed.

31. The processing arrangement of claim 30 including removing the cup manifold from the impactor housing and transporting the cup manifold to a first service manifold, securing the cup manifold to the first service manifold, adding a solvent into each of the cups of the cup manifold through respective passageways in the first service manifold, rocking the cup manifold and first service manifold after adding the solvent to enhance dissolution of particles in the cup manifold, withdrawing liquid samples from the cup

manifold through passageways of the first service manifold, releasing the cup manifold from the first service manifold, washing the cup manifold at a second service manifold by introducing wash liquid through passageways of the second manifold into the cup manifold, and then draining the cups of the cup manifold of the wash liquid.

32. The method of claim 31 further comprising adding an anti-bounce coating to surfaces of the cup manifold by introducing the coating material through a selected service manifold.

33. A method of handling and cleaning a housing having a chamber from which samples of interest have been recovered, comprising:

a) supporting the housing on a cradle pivotable about an axis;

b) adding cleaning solution to the chamber in the housing;

c) pivoting the cradle about the axis to move the cleaning solution across surfaces defining the chamber; and

d) removing the cleaning solution from the chamber.

34. The method of claim 33 further comprising adding a rinse liquid to the chamber and repeating the pivoting and removing steps.

35. The method of claim 34 further comprising sealably covering the cavity before pivoting the cradle, and wherein the removing step includes tilting the chamber to drain liquid material from the chamber.

36. The method of claim 33 and covering the housing chamber before supporting the housing on the cradle.